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crystallizing said semiconductor film by heating in a way
that causes said catalyst metal to diffuse through the
semiconductor film and function to promote the crystallization
of the semiconductor film;

forming a gettering layer in contact with said
semiconductor film after the crystallization, said gettering
layer including phosphorus; and

heating said semiconductor film and said gettering layer at
a temperature [not lower than] from 500°C to 800°C in order to
getter the catalyst metal in said semiconductor film using said
gettering layer.

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28. (Amended) A method according to claim 26 wherein said
heating to getter the catalyst metal is continued for 1-4 hours.

8-34. (Amended) A method of manufacturing a device
comprising:

providing a substantially intrinsic semiconductor film on
an insulating surface;

providing said semiconductor film with a catalyst metal-
containing material;

crystallizing said semiconductor film by heating in a way
that causes said catalyst metal to diffuse through the

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semiconductor film and [functions] function to promote the crystallization of said semiconductor film;

forming a gettering layer in contact with said semiconductor film after the crystallization, said gettering layer including phosphorus; and

heating said semiconductor film and said gettering layer in order to getter the catalyst metal in said semiconductor film by said gettering layer.

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36. (Amended) A method according to claim ~~34~~⁸ wherein said heating to getter the catalyst metal is continued for 1-4 hours.

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41. (Amended) A method according to claim ~~34~~⁸ wherein said heating to getter the catalyst metal is conducted within a temperature from 500°C to 800°C.

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44. (Amended) A method according to claim ~~42~~¹⁶ wherein said heating to getter the catalyst metal is conducted for 1-4 hours.

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50. (Amended) A method according to claim ~~42~~¹⁶ wherein said heating to getter the catalyst metal is conducted within a temperature from 500°C to 800°C.

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51. (Amended) A method of manufacturing a device having a junction, said method comprising:

providing a semiconductor film comprising amorphous silicon on an insulating surface;

providing a catalyst metal-containing material on said semiconductor film;

crystallizing said semiconductor film by heating in a way that causes said metal to diffuse through the semiconductor film and to promote the crystallization thereof;

forming a gettering layer in contact with said semiconductor film after the crystallization, said gettering layer including phosphorus;

heating said semiconductor film and said gettering layer at a temperature [not lower than] from 500°C to 800°C in order to getter the metal included in said semiconductor film by said gettering layer; and

forming a doped semiconductor film on said semiconductor film to form a junction.

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53. (Amended) A method according to claim 51 wherein said heating to getter the metal is conducted for 1-4 hours.

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~~C9~~ ~~Sub~~ ~~HI~~ ~~34~~ 31. (Amended) A method according to claim ~~59~~ ³² wherein said heating to getter the catalyst metal is continued for 1-4 hours.

~~C10~~ ~~Sub~~ ~~HI~~ ~~39~~ 36. (Amended) A method according to claim ~~59~~ ³² wherein said heating to getter the catalyst metal is conducted within a temperature from 500°C to 800°C.

~~C4~~ ~~Sub~~ ~~HI~~ ~~42~~ 39. (Amended) A method according to claim ~~59~~ ⁴⁰ wherein said heating to getter the catalyst metal is continued for 1-4 hours.

~~Sub~~ ~~HI~~ ~~48~~ 45. (Amended) A method according to claim ~~59~~ ⁴⁰ wherein said heating to getter the catalyst metal is conducted within a temperature from 500°C to 800°C.

~~C12~~ ~~Sub~~ ~~HI~~ ~~49~~ 46. (Amended) A method of manufacturing a device, comprising:

~~Sub~~ ~~E7~~ providing a semiconductor film on an insulating surface;
forming a catalyst metal-containing material on said semiconductor film, said catalyst being a material which facilitates crystallization of said semiconductor film to be formed more easily, but which when present in a final product of the device will degrade operation of the device;

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crystallizing said semiconductor film by heating in a way
that causes said catalyst metal-containing material to diffuse
into at least a part of the semiconductor film, said catalyst
[metal containing] metal-containing material when so diffused
functioning to facilitate said crystallization;

forming a gettering layer in contact with said
semiconductor film after said crystallization, said gettering
layer including phosphorus; and

D processing said semiconductor film and said gettering layer
to [reduce a concentration of] reduce the concentration
~~remove at least one portion of~~
said catalyst metal in said semiconductor film.

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31. (Amended) A method of manufacturing a device comprising:
providing a semiconductor film on an insulating surface;
providing said semiconductor film with a [metal containing]
C/B metal-containing material;

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crystallizing said semiconductor film by heating in a way
that causes said metal to diffuse through the semiconductor film
and [functions] function to promote the crystallization of the
semiconductor film;

D introducing phosphorus into a portion of said crystallized
semiconductor film by plasma doping; and

heating said semiconductor film after introducing said phosphorus at a temperature [not lower than] from 500°C to 800°C in order to getter the metal in said semiconductor film.

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22. (Amended) A method of manufacturing a device comprising:

providing a semiconductor film doped with boron at a

concentration of 0.001-0.1 atm% on an insulating surface;

providing said semiconductor film with a [metal containing]

metal-containing material;

crystallizing said semiconductor film by heating in a way that causes said metal to diffuse through the semiconductor film and [functions] function to promote the crystallization of said semiconductor film;

forming a gettering layer in contact with said semiconductor film after the crystallization, said gettering layer including phosphorus; and

heating said semiconductor film and said gettering layer in order to getter the [catalyst] metal in said semiconductor film by said gettering layer.

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83. (Amended) A method of manufacturing a device comprising:

providing a substantially intrinsic semiconductor film on an insulating surface;

providing said semiconductor film with a metal-containing material;

crystallizing said semiconductor film by heating in a way that causes said metal to diffuse through the semiconductor film and [functions] function to promote the crystallization of said semiconductor film;

introducing phosphorus into a portion of the crystallized semiconductor film by plasma doping; ^{and}

heating said semiconductor film after introducing phosphorus in order to getter the metal in said semiconductor film.

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84. (Amended) A method of manufacturing a device comprising:

providing a semiconductor film doped with boron at a concentration of 0.001-0.1 atm% on an insulating surface;

providing said semiconductor film with a [metal containing] metal-containing material;

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crystallizing said semiconductor film by heating in a way that causes said metal to diffuse through the semiconductor film and [functions] function to promote the crystallization of said semiconductor film;

D introducing phosphorus into a portion of the crystallized semiconductor film by plasma doping; *and*

Sub E heating said semiconductor film after introducing phosphorus in order to getter the metal in said semiconductor film.

PAB *5.6*
Chad 85. (Amended) A method of manufacturing a device comprising:

providing a semiconductor film on an insulating surface;
providing a [metal containing] metal-containing material on said semiconductor film;

crystallizing said semiconductor film by heating in a way that causes said metal to diffuse through the semiconductor film and [functions] function to promote the crystallization of said semiconductor film;

D introducing phosphorus into a portion of the crystallized semiconductor film by plasma doping; *and*
~

heating said semiconductor film in a nitrogen atmosphere after introducing phosphorus in order to getter the metal contained in said semiconductor film.

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86.

(Amended) A method of manufacturing a device having a junction, said method comprising:

providing a semiconductor film doped with boron at a concentration of 0.001-0.1 atm% on an insulating surface;

providing a metal on said semiconductor film;

crystallizing said semiconductor film by heating to cause said metal to diffuse through the semiconductor film and to promote the crystallization of said semiconductor film;

forming a gettering layer in contact with said semiconductor film after the crystallization thereof, said gettering layer including phosphorus;

heating said semiconductor film and said gettering layer in order to getter the [catalyst] metal in said semiconductor film by said gettering layer; and

forming a junction using an intrinsic semiconductor film.

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87. (Amended) A method of manufacturing a device having a junction, said method comprising:

providing a substantially intrinsic semiconductor film on an insulating surface;

providing a metal on said semiconductor film;

crystallizing said semiconductor film by heating to cause said metal to diffuse through the semiconductor film and to promote the crystallization of said semiconductor film;

introducing phosphorus into a portion of the crystallized semiconductor film by plasma doping;

heating said semiconductor film after introducing phosphorus in order to getter the metal in said semiconductor film by said [gettering layer] phosphorus; and

forming a junction using a doped semiconductor film.

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88. (Amended) A method of manufacturing a device having a junction, said method comprising:

providing a semiconductor film doped with boron at a concentration of 0.001-0.1 atm% on an insulating surface;

providing a metal on said semiconductor film;

crystallizing said semiconductor film by heating to cause said metal to diffuse through the semiconductor film and to promote the crystallization of said semiconductor film;

introducing phosphorus into a portion of the crystallized semiconductor film by plasma doping;

heating said semiconductor film and said gettering layer in order to getter the [catalyst] metal in said semiconductor film by said [gettering layer] phosphorus; and

forming a junction using an intrinsic semiconductor film.

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89. (Amended) A method of manufacturing a device comprising the steps of:

providing a semiconductor film on an insulating surface;

forming a [metal containing] metal-containing material on said semiconductor film, said metal being a material which facilitates crystallization of said semiconductor film to be formed more easily, but which when present in a final product of the device will degrade operation of the device;

crystallizing said semiconductor film by heating in a way that causes said [metal containing] metal-containing material to diffuse into at least a part of the semiconductor film, said [metal containing] metal-containing material when so diffused functioning to facilitate said crystallization;

introducing phosphorus into a portion of the crystallized semiconductor film by plasma doping; ^{and}

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contd

processing said semiconductor film after introducing phosphorus to [reduce a concentration] ~~remove at least one~~ ^{reduce the concentration} portion of said metal in said semiconductor film.

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90. (Amended) A method according to any one of claims ~~26~~,
8, 16, 25, 32, 40, 49, 52, 60
34, 42, 51, 59, 67, 76 [and] or 81-89 wherein said insulating surface comprises [a] silicon oxide.

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91. (Amended) A method according to any one of claims ~~26~~,
8, 16, 25, 32, 40, 49, 52, 60
34, 42, 51, 59, 67, 76 [and] or 81-89 wherein [a] the concentration of said metal in said crystallized semiconductor film is not higher than 5×10^{18} atoms/cm³.

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92. (Amended) A method according to any one of claims ~~26~~,
8, 16, 25, 32, 40, 49, 52, 60
34, 42, 51, 59, 67, 76 [and] or 81-89 wherein a dose amount of said phosphorus is ⁱⁿ a range from 1×10^{14} to 1×10^{17} /cm².

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93. (Amended) A method according to any one of claims ~~26~~,
8, 16, 25, 32, 40, 49, 52, 56, 60
34, 42, 51, 59, 67, 76 [and] 81-89] 81, 85, or 89 wherein said semiconductor film is provided by a plasma CVD method.

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84. (Amended) A method according to any one of claims ~~26~~,
8, 16, 25, 32, 40, 49, 52, 56, 60
34, 42, 51, 59, 67, 76 [and 81-89] 81, 85, or 89 wherein said
semiconductor film is provided by a low pressure CVD method.

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95. (Amended) A method according to any one of claims ~~26~~,
8, 16, 25, 32, 40, 49, 52, 56, 60
34, 42, 51, 59, 67, 76 [and 81-89] 81, 85, or 89 wherein said
semiconductor film is provided by a sputtering method.

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98. (Amended) A method according to any one of claims [81]
53, 60
~~82-89~~ wherein said heating or processing to getter the metal is
conducted within a temperature from 500°C to 800°C.

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98. (Amended) A method according to any one of claims ~~81~~-
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89 wherein said heating or processing to getter the metal is
conducted for 1-4 hours.

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100. (Amended) A method according to any one of claims ~~81~~,
54, 56, 58, 60
83-85 [and] or 87-89 further E comprising a step of removing said
portion after heating or processing said crystallized
semiconductor film.